DICK SMITH
ELECTRONICS

DELUXE DESOLDERING STATION

T 2270

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IMPORTANT SAFETY INFORMATION

WARNING:

- Remember, the tip is hot! The tip and barrel of the desoldering wand will cause serious burns if they are allowed to contact skin. Always return the desoldering wand to the safety holder after each use.
- Do not work on live circuits! Before working on any mains powered equipment, make sure that it is turned off, and the mains plug is removed from the power point.
- Advise other people in the work area that the unit can reach a very high temperature and should be considered potentially dangerous.
- Keep the tip and heating element away from your body, clothes and flammable material when in operation.
- Turn the power off while taking breaks or when you have finished using the unit.
- Soldering irons operate at high temperatures and can easily burn people or objects. Please allow a sufficient time for it to cool before changing tips or servicing the unit!
- Do not use the unit for applications other than intended.
- Do not modify the unit.
- Do not wet the unit or use the unit when your hands are wet.
- Do not inhale solder fumes.
- Always wear suitable eye protection when operating this product.
- This tool must be placed on its stand when not in use.
- The appliance is not intended for use by young children or infirm persons unless they have been adequately supervised by a responsible person to ensure that they can use the appliance safely.
- Young children should be supervised to ensure that they do not play with the appliance.
- Do not use if damaged. If the power lead becomes damaged or the soldering station becomes faulty, discontinue use immediately.

PRODUCT DESCRIPTION

The T 2270 desoldering station has been developed to meet the present and future needs of the electronic production industry, hobbyists and service repair technicians alike. The T-2270 desoldering station has an electronic temperature controlled tip and a self-contained vacuum pump, eliminating the need for additional vacuum air sources. The T 2270's vacuum pump requires no oil, is maintenance free and will not overload with continuous use. The vacuum pump provides up to 60cm/hg (23 in/hg) suction power, activated by a push button switching circuit located on the desoldering iron's handle.

The T 2270 incorporates electronic circuitry which enables the user to alter the tip temperature from approx 300°C to 450°C (572°F to 842°F) without changing tips or heating elements. Also, with the simple flip of a switch on the front panel, the temperature readout can be changed from Celsius to Fahrenheit. The tip temperature is maintained within ±3°C (±6°F) of the set temperature using a thermocouple sensor located in the heating element, allowing the tip to rest against the sensor for faster temperature response. The revolutionary zero voltage electronic switching design also protects sensitive components (CMOS devices, etc.) against damaging current and voltage spikes commonly produced by less efficient, mechanically switched stations.

The super-fast heat-up and quick recovery heating element is specifically designed to bring the tip temperature up to full setting in about one minute. The power unit is isolated from the mains by a transformer and provides 24Vac to drive the heating element. The desoldering tip is connected to mains earth.

SPECIAL FEATURES OF THE T 2270

Delayed suction: To help eliminate solder clogging in the tip, a delayed switch feature has been incorporated which allows the pump to continue sucking for 1.5 seconds after the actuator switch is released.

Digital display: Allows the user to accurately set the desired temperature, and then monitor the **actual** temperature of the desoldering tip.

Celsius/Fahrenheit switch: A conveniently located switch to easily convert from one common measure to another.

Working temperature

Recommended tip working temperatures are detailed below and can vary from joint to joint.

- Operation for small joints: 320°C-360°C (608°F-680°F)
- Operation for larger joints: 370°C-400°C (698°F-752°F)

Too low a temperature will slow the flow rate of solder and may clog the tip; too high a temperature may burn the PCB.

PACKAGING CONTENTS

Your new T 2270 desoldering station is supplied with the following accessories.

- T 2270 desoldering station base unit
- DIA60A desoldering iron, including vacuum and electrical lines
- Mains power cord
- Soldering iron stand
- Tip cleaner pad
- Desoldering iron cleaning and maintenance kit, includes:
    - Wire brush
    - Tip cleaner
    - 1x spare solder cooling strip
    - White filters
    - Black filters

OPERATING INSTRUCTIONS

Preparing for use

- Unpack the T 2270 components and find a clear work space to set up the station for use.
- Set up the soldering iron holder and tip cleaner
- Connect the DIA60A power lead to the DIA socket on the front panel of the base unit.
- Connect the DIA60A vacuum line to the VAC inlet on the front panel of the base unit.
- Place the DIA60A desoldering iron in the soldering iron holder.
- Connect the mains lead to the back of the T2270 base unit.
- Connect the mains lead to a 240V outlet and turn the power on.

Operation

- Set the °C /°F switch to the desired units.
- Turn the T-2270 POWER switch to the ON position.

- Set the READ/SET switch to SET and use the temperature display to obtain the desired heat setting.
- Set the READ/SET switch to READ.
- The HEATING light will begin to glow, and when the desoldering tip reaches the desired temperature, the HEATING light will begin to flash on and off.
- Tin the surface of the desoldering tip with clean resin-cored solder.

T 2270 operating procedures - desoldering

- Apply the desoldering tip to the joint to be de-soldered. Place the hole in the tip over the component lead.
- Wait for the solder in the entire joint to melt. For some double sided boards, you can see the solder melting on the other side of the board. You might need to move the desoldering tip around the joint to ensure all of the solder has melted. (Fig 1)
- Activate the vacuum pump by pressing the button on the desoldering iron handle. Hold the button in until all of the solder in the joint has been removed. (Fig 2)

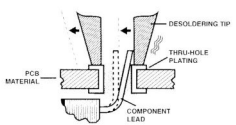
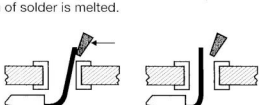


fig 1 fig 2

- Remove the desoldering tip from the joint.

Hints for successful desoldering

- Release the vacuum switch only after all of the solder on the tip has been removed, otherwise the tip may clog.
- For very old or tarnished solder joints, add fresh solder to the joint before desoldering to aid the removal process.
- Remove the solder collector and clean it regularly. Daily cleaning is strongly recommended, and is best performed before initial use for the day.
- Hold the PCB up and apply the desoldering tip from underneath during desoldering. This method is particularly useful for double sided PCB's since you can often see the top of the joint and know exactly when all of the solder has melted before applying the vacuum.
- For larger diameter component leads, the desoldering tip nozzle may be blocked by the component lead, leaving no room for the molten solder to be removed. Use a larger tip for proper operation. If a larger tip is not available, you can apply the desoldering tip next to the component lead. This may require a few operations in different places around the lead to remove all of the solder.
- For plated through PCB holes, the component lead may stick to the sides of the plated hole preventing component removal, even after all of the solder appears to have been removed. In this case, apply heat to the component lead only and apply light pressure in a direction that will free the component lead from the plated hole. The component lead will often 'click' free as the last remaining section of solder is melted.



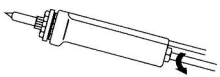
MAINTENANCE

Regular maintenance of the DIA60A desoldering iron is required to maintain the operational efficiency of the T 2270 desoldering station. The glass barrel and filters located in the handle are designed to collect and cool the removed solder. This solder collection system requires regular emptying during normal use. If you do not empty the solder collectors regularly, the vacuum performance of the T 2270 will deteriorate and prevent successful desoldering.

BASIC SOLDER REMOVAL

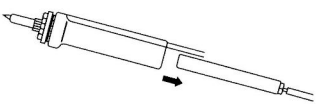
Caution: The POWER switch on the base unit must be turned OFF and the iron allowed to cool to room temperature before commencing this operation.

- Hold the iron at a slight angle, with the tip facing upwards. Press and turn the red knob at the rear of the desoldering iron.



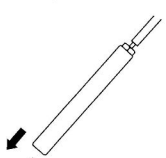
- Slide out the solder collector. The vacuum tube should stay attached to the bottom of the solder collector.

  Note: The solder collector tube is glass and will break instantly if you use pliers to remove it. The solder collector tube should be removable by hand. If it is frozen in place, follow the tip removal procedure later in this manual, and then remove the solder collector while the tip is out.

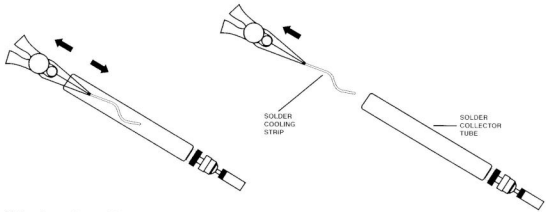


- Hold the solder collector over a suitable waste receptacle. Point the open end of the solder collector downwards while shaking slightly and the waste solder will fall out.

  Note: If the solder collector tube is jammed with solder use a soldering iron to carefully heat the solder and melt it out of the tube. Always use suitable heat resistant gloves during this operation.



- Remove the solder cooling strip using a pair of needle nose pliers. Take care not to nick or scratch the glass solder collector tube with the pliers.



- Carefully clean the solder collector tube and the cooling strip using the wire brush.
- Reassemble the solder collector assembly and refit to the desoldering iron.

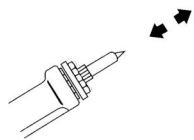
Cleaning clogged tips

Caution: Always use suitable heat resistant gloves during this operation to prevent accidental burns.

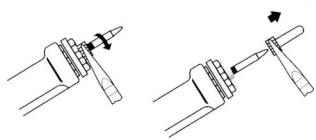
Caution: Eye protection should always be worn when maintaining or replacing tips.

Use the spring wire tool regularly to push small particles of solder through the tip. If the tip becomes severely clogged and the spring wire tool will not clear the blockage, follow the procedure below to clear the blockage.

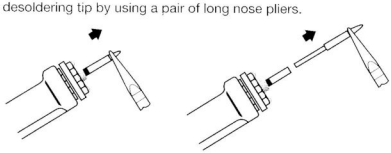
- Raise the tip temperature to maximum. Try cleaning the tip using the spring wire tool after three minutes. If the spring wire tool is successful, then return the tip temperature to the normal setting and empty the solder collector tube as described above. Otherwise, continue to follow the steps below.



- With the tip temperature set to maximum, unscrew the barrel nut assembly using a pair of long nose pliers. Place the barrel cover somewhere safe; remember it will be very hot.



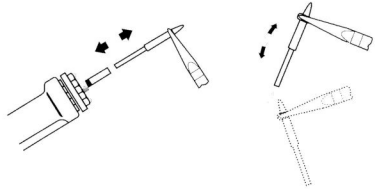
- Remove the desoldering tip by using a pair of long nose pliers.



- Insert the stainless tube of the tip back in to the barrel to melt the solder. Hold the tip in this position for about 5 seconds. Then remove the tip and carefully shake out the molten solder.

  Caution: Be very careful to shake the molten solder into a safe container. Remember that the solder will be very hot.

  Note: You may need to heat the stainless tube a few times to remove all of the solder.



- Replace the tip and barrel nut assembly using the pliers. Ensure that you do not over tighten the barrel nut.
- Reduce the tip temperature to a normal setting.
- Use the spring wire tool to ensure that all of the solder has been removed from the tip.
- Clean the solder collector tube as described previously.

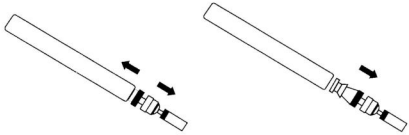
Replacing the filters

There are three filters located in the vacuum system of the DIA60A desoldering iron. A white filter is located in the base of the solder collector tube, and two black in-line filters are located in the vacuum line near the VAC inlet on the base unit. The filters should be replaced when you notice that the vacuum performance of the T 2270 has diminished.

Solder collector filter (White)

The solder collector filter should be replaced once it turns yellow, or if it is suspected of causing restriction to the vacuum performance.

- Turn the POWER switch on the base unit to the OFF position and wait for the desoldering iron to cool to room temperature.
- Remove the solder collector tube, and empty the solder as detailed in the Basic Solder Removal section above. Leave the solder cooling strip out of the tube.
- Remove the vacuum line from the base of the solder collector tube.

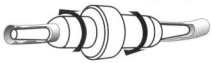


- Remove the white filter by pushing it through using the wire brush. Discard the white filter.
- Use the wire brush to clean the entire solder collector tube.
- Roll a new white filter and insert it into the end of the solder collector tube.
- Refit the vacuum line into the solder collector tube. Reassemble the solder collector assembly and refit to the desoldering iron.

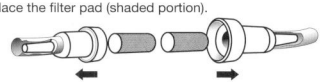
In-line filters (Black)

The in-line filters should be replaced when they are suspected of causing restriction to the vacuum performance.

- Remove the wire clip from around the in-line filter body
- Unscrew the two halves of the in-line filter and then pull apart.



- Remove and replace the filter pad (shaded portion).



Reassemble the in-line filter and refit the wire clip.

METHOD TO CHECK FOR LOSS OF SUCTION

The following procedure should be used on the T 2270 to check whether loss of suction is due to the tip, solder collector, tube or in-line filter.

- With the desoldering station switched on and ready for use, place a ball of fresh solder on the tip of the desoldering iron. Point the desoldering tip away from you and depress the vacuum switch. The molten solder should be sucked in swiftly. If the molten solder is not sucked in swiftly, then follow the Basic solder removal and/or the Cleaning clogged tips sections to rectify.

  Note: It is normal for the T 2270 to sometimes 'puff' out solder flux smoke from the desoldering tip when activated as described above.

- If cleaning the solder collector and tip is not successful in restoring vacuum performance, continue through the steps below.
- Turn the POWER switch on the base unit to the OFF position and allow the desoldering iron to cool to room temperature.

Checking the vacuum pump :

- Remove the solder collector from the desoldering iron. Do not refit to the desoldering iron.
- Place the desoldering iron in the soldering iron holder.
- Disconnect the vacuum line from the VAC inlet on the base unit.
- Set the temperature dial to the minimum setting.
- Turn the POWER switch on the base unit to the ON position.
- Place your finger over the VAC inlet and press the vacuum button on the soldering iron. You should feel a strong vacuum at this point. If a strong vacuum is felt, the vacuum pump is OK, and you should proceed to checking the in-line filters. If a strong vacuum is not obtained, the vacuum pump may require servicing. Return the T 2270 desoldering station to the nearest authorized repair centre for repair.

Checking the in-line filters :

- Disconnect the vacuum line from the inlet of the in-line filters. Each in-line filter should now have a short section of vacuum line connected to its outlet.
- Connect one of the in-line filters to the VAC inlet on the base unit via the short section of vacuum line.
- Place your finger over the vacuum filter inlet and press the vacuum button on the soldering iron. If you do not feel a strong vacuum at this point, service the in-line filter as detailed in the Replacing the filters section above.

- Repeat this test for the second in-line filter and service as necessary.
- Once both in-line filters are clear, proceed to checking the vacuum line.

Checking the vacuum line :

- Re-assemble the two in-line filters into the vacuum line.
- Disconnect the vacuum line from the base of the solder collector tube.
- Place your finger over the end of the vacuum line and press the vacuum button on the soldering iron. If you do not feel a strong vacuum at this point, the vacuum line is blocked and must be replaced.

Checking the solder collector and filter

- Re-connect the vacuum line to the base of the solder collector tube.
- Place your finger over the open end of the solder collector tube and press the vacuum button on the soldering iron. If you do not feel a strong vacuum at this point, service the white filter as detailed in the previous replacing the filters section. If you do feel a strong vacuum at this point, the entire vacuum system is clear and serviceable.
- Turn the POWER switch on the base unit to the OFF position. Reassemble the desoldering iron, solder collector tube and vacuum lines.
- Return to normal use.

TIP CARE AND USE

Tip replacement

Caution: Eye protection should always be worn when maintaining or replacing tips.

- Desoldering tips can be changed or replaced simply by unscrewing the barrel nut assembly. The station must be turned off and allowed to cool to room temperature before commencing this operation.

  Note: If the system is left on for extended periods without a tip in place, damage to the iron assembly may occur!

- After removing the tip, blow out any oxide dust that may have formed in the tip receptacle. Be careful not to get the dust in your eyes. Replace the tip and hand tighten the barrel nut assembly.

New tips

Follow the procedure below to tin new tips.

- Ensure that the desoldering iron has been switched off and allowed to cool to room temperature.
- Fit the new tip to the T 2270 desoldering iron.
- Turn the main POWER switch to the ON position.
- Set the temperature to 250°C (482°F).
- After the tip reaches the set temperature, tin the surfaces of the tip with rosin-core solder.
- Allow the desoldering station to run at 250°C (482°F) for 3 minutes.
- Your new tip is now ready for use.

Care of tips

- Important: During heavy use, it is recommended that you remove and clean the tip daily. If a new tip is installed, remove any loose buildup in the tip and barrel assembly, otherwise the tip may fuse to the heating element or retaining barrel.
- Always tin the tip before returning it to the holder, turning off the station, or storing it for long periods of time. Wipe the tip on the tip cleaner prior to use.
- Using high temperatures (more than 400°C or 750°F) will shorten tip life.

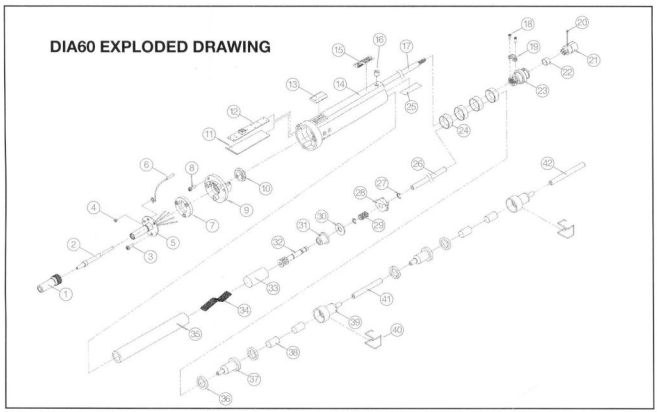
- Do not use excessive pressures on the tip or rub the joint with the tip while desoldering; it does not improve the heat transfer and may damage the tip.
- Never clean the tip with a file or abrasive materials.
- Do not use fluxes which contain chloride or acid. Use only rosin or resin activated fluxes.
- If an oxide film forms, it can be removed by very careful buffing with a 600-800 grit emery cloth, isopropyl alcohol or equivalent, and then wrapping rosin core solder around the newly exposed surfaces. Coat the tinned areas with rosin-core solder after the resin-core has melted.
- Do not allow the tip to make contact with organic substances such as plastic, resin, silicone, grease and other chemicals.

Interchangeable tips

- Three sizes of tip are available for the T 2270, offering 1.0, 1.2 or 1.5mm diameter desoldering holes in the tip. The T 2270 is supplied as standard with a 1.2mm tip.

SPECIFICATIONS

Rated input	220-240V ~ 50Hz 140-190W
Desoldering iron part number	DIA60A
Heater voltage	24Vac
Heater power	60W
Temperature range	300°C - 450°C (572°F - 842°F)
Dimensions (WxLxH)	200 x 235 x 115mm
Net weight	5.5kgs



PART	DESCRIPTION	QUANTITY
1	Barrel nut assembly	1
2	Desoldering Tip	1
3	Screw	3
4	Rivet	1
5	24v/60w desoldering heater	1
6	Teflon hose	1
7	Spacer	1
8	Screw	3
9	Bakelite heater holder	1
10	Vacuum seal	1
11	Insulation	1
12	Heater PCB	1
13	Push button	1
14	Desoldering iron handle	1
15	Label	1
16	M6 plastic screw	1
17	7-wire silicone rubber cable	1
18-23	7 pin connector components	1
24	Silicone rubber tube	4
25	Label	1
26	Silicone rubber tube	1
27	C-clip	2
28	Solder collector assembly latch plate (lock)	1
29	Tension spring	1
30	Vacuum sealing stopper	1
31	Vacuum seal	1
32	Fume reducer	1
33	White cotton filter	1
34	Solder cooling strip	1
35	Glass solder collector tube	1
36	Seal o-ring	4
37	In-line filter cap	2
38	Black in-line filter	4
39	In-line filter cap	2
40	In-line filter clip	2
41	Silicone rubber tube	1
42	Silicone rubber tube	1